

14. The method of claim **13** wherein iteratively calculating comprises iteratively calculating until observed and measured time-intensity curves match.

15. The method of claim **9** wherein determining comprises determining relative to a baseline flow rate.

16. The method of claim **15** wherein the baseline flow rate comprises flow rate from artificially generated stenoses.

17. The method of claim **9** wherein calculating the first flow comprises calculating a third flow for a rest state, and calculating the first flow as a multiplication of the third flow by a flow rate scalar from the rest state to a hyperemic state, wherein the flow rate scalar comprises a rest-to-hyperemic flow rate ratio.

18. A method for computing a hemodynamic quantity, the method comprising:

acquiring angiography data from a patient;
iteratively calculating, by a processor, a first flow in a blood vessel of the patient based on motion tracking

contrast agents represented in the angiography data, the iterations occurring until observed and measured time-intensity curves match;

perturbing the first flow to a plurality of second flows; computing, by the processor, fractional flow reserve values from the first flow and the plurality of second flows; determining a sensitivity of the fractional flow reserve values to the perturbing; and reporting the sensitivity.

19. The method of claim **18** wherein determining comprises determining relative to a baseline flow rate.

20. The method of claim **18** wherein calculating the first flow comprises calculating a third flow for a rest state, and calculating the first flow as a multiplication of the third flow by a flow rate scalar from the rest state to a hyperemic state, wherein the flow rate scalar comprises a rest-to-hyperemic flow rate ratio.

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